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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/938,173 09/26/97 BROCKHOFF

A P61957

EXAMINER

IM22/0815

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HOPKINS MN 55343

KIM, S

ART UNIT

PAPER NUMBER

1723

DATE MAILED:

08/15/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/938,173

Applicant(s)

Brockhoff

Examiner

John Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jul 9, 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 17-21 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, and 19 is/are allowed.
- 6) ☒ Claim(s) 3-14, 17, 18, 20, and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/25/00 has been entered.
2. The oath or declaration filed 9/11/00 is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

- 1) Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).
 - 2) New oath claims a priority to new German application no. 195 45 404.9 filed 12/6/95 instead of originally claimed priority to German application no. 197 19 555.5 filed 5/9/97.
 - 3) It does not identify the citizenship of each inventor.
3. Claim 22 is objected to because of the following informalities: A semi-colon after "eddy chamber" on line 23 should be deleted. Appropriate correction is required.
 4. Claims 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 is indefinite for failing to particularly point out what "it" on line 22 is that moves through the cyclone eddy chamber. Recitations of "the radially inner center of the cyclone

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eddy current (path)" in claims 18-21, "said pitch" in claim 19, "the radially outer cyclone eddy region", "the cyclone eddy current region" and "the cyclone eddy current path" in claims 20-21 lack positive antecedent basis. Recitation of "the cyclone outlet" on line 19 of claim 20 and on line 18 of claim 21 lacks a positive antecedent basis.

5. Claims 3-14, 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 49-15341 (hereinafter referred to as JP '341) in view of Great Britain Patent No. 1,352,166 (hereinafter referred to as GB '166). JP '341 teaches a cyclone device for removing gas from liquids comprising a non-rotating eddy chamber (1) having an inlet and an outlet for producing a cyclone eddy current that separates gas from liquid where gas is removed through an outlet (5) in a radially inner cyclone eddy current region, a cyclone inlet comprising multiple wings supporting and attached to an inserted body, streamline shaped wherein shape causes a narrowing funnel shape of liquid inlet channel in a housing with constant diameter and gas outlet (5) and a portion of liquid outlet (1) positioned in a coaxial manner downstream from a cyclone outlet, an inlet channel and the eddy chamber having respectively aligned center lines, the cyclone outlet for liquid phase and the eddy chamber having respectively aligned center lines (see figure 1). Claims 3-14, 18 and 20 essentially differ from the apparatus of JP '341 in reciting a helical circular path made by at least one helically extending rib passing around the insert body. GB '166 teaches a cyclone device with helical elements (6) on an inserted body (5) for driving gas in an intense whirling motion which results in the assembly of gas along the axis of the conduit owing to its low density relative to the liquid (see figure; page 2, lines 12-20). It would have been

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obvious to a person of ordinary skill in the art to modify the multiple wings on the inserted body of JP '341 for the helical elements in order to improve intense whirling motion of gas to gather gas along the axis of the conduit for more efficient separation of gas as suggested by GB '166. At best, claim 17 differs from the apparatus of JP '341 modified by GB '166 in reciting a pressure supplying pump for liquid with positive pressure to the liquid inlet channel. It would have been obvious to a person of ordinary skill in the art to incorporate a pressure supplying pump to the cyclone apparatus of JP '341 modified by GB '166 since the entry of faster flowing liquid actuated by any pressure device such as a common pressure supplying pump enhances the whirling action around the helical elements and separates out gas more effectively from liquid.

6. Claims 1-2 and 19 are allowed.
7. Claim 21 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
8. Applicant's arguments with respect to claims 1-14 and 17-21 have been considered but are moot in view of the new ground(s) of rejection.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is (703) 308-2350. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for official response

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after final action is (703) 305-3599, and the fax phone number for all other official faxes is (703) 305-7718.

When sending a draft amendment by fax, please mark the paper as "DRAFT"; otherwise, mark the paper "OFFICIAL". This will expedite the processing of the paper.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.


John Kim
Primary Examiner
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J. Kim
August 14, 2001